REMARKS

Claims 1-39 are pending and rejected as set forth below. Applicant respectfully submits that the claims as previously filed are in condition for allowance and respectfully requests reconsideration and further examination in view of the following.

I. Double Patenting.

In the Office Action, the Examiner indicated that should claim 14 be found allowable, claims 15 and 16 will be objected to under 37 CFR 1.75 as being a substantial duplicate and if claim 18 was to be found allowable, claim 19 will be objected to under 37 CFR 1.75 as being a substantial duplicate. Applicant reserves the right to address any such objections if/when they are made.

II. Rejections under 35 U.S.C. §103(a).

Applicant has reviewed the Office Action and respectfully submits that it fails to establish a *prima facie* case of obviousness, as explained below.

A. Rejection under §103 over *Grant* in view of *Morando '796*.

Claims 1, 6-19 and 22-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,371,723 ("*Grant*")in view of U.S. Patent No. 6,354,796 ("*Morando '796*"). Applicant respectfully submits that neither reference, alone or in combination, teaches or suggests the claimed invention.

Grant teaches a shaft system 100 that includes a shaft coupler 104 and an outer sleeve shaft 103. Col. 5, ll. 38-41. The shaft coupler is placed over a graphite shaft and the shaft sleeve is placed over the shaft coupler. Col. 6, ll. 19-29. Cement is then applied to approximately 1/2" of each end of the shaft. The combined shaft, shaft coupler and shaft sleeve are then heated to approximately 800°F. Col. 6, ll. 29-34. This causes the shaft coupler to expand and secure the shaft sleeve to the shaft. Col. 6, ll. 34-36. The resulting product would not have cement substantially filling the gap between the graphite component and the outer coating, but instead teaches cement only filling about a 1/2" high space between the two at each end of the shaft. As acknowledged in the Office Action, *Grant* does not teach or suggest, among other things, (a) a non-protected component, such as a graphite shaft, that has one or more passages through which uncured cement can be injected, and/or (b) a protective coating, such as a ceramic sleeve, that has one or more openings through which uncured cement can be injected.

Grant expressly states that "the shaft sleeve is securely attached to the shaft by the expansion of the shaft coupler relative to the shaft and the shaft sleeve," and not by injecting cement between a component and protective coating as disclosed in the present invention. Abstract. Moreover, *Grant* expressly teaches away from using cement to adhere the sleeve to the shaft, and goes so far as to describe the problems with the prior art methods that Applicant's invention obviates. *Grant* states that air gaps formed from the displacement of cement when placing the sleeve over the shaft "cause graphite deterioration through oxidation," and leads to "time consuming and expensive" replacement of the shaft. Col. 1, l. 37 – col. 2, l. 5. *Grant* further states that it is "an object of this invention to provide an alternative way to couple, attach, or secure the shaft to the outer sleeve or outer surface." Col. 2, ll. 6-8. Modifying the device in *Grant* with the openings and grooves of *Morando '796* in order to inject cement between the shaft and sleeve would thus defeat *Grant*'s express purpose.

Furthermore, *Morando '796* expressly teaches that the "cement is injected under pressure in opening 180 and via passage 174 fills the cavity generated by grooves 176 and 178 in the housing and leg respectively." Col. 4, ll. 63-66 (emphasis added). In *Grant*, however, the cement is applied only to ½ an inch of the ends of the shaft, not along the entire length of the shaft. If the modification proposed by the Office Action were implemented, the pressurized cement would fill the entire space between the shaft and sleeve, leaving no room for *Grant*'s shaft coupler whose stated purpose is to expand and attach the shaft to the sleeve. This is clearly contrary to *Grant*'s stated purpose. As such, Applicant respectfully submits that there is no motivation to modify *Grant* to employ the grooves and openings disclosed by *Morando '796* as proposed in the Office Action and that (at least) *Grant* teaches away from the proposed combination.

B. Rejection under §103 over *Morando '753* in view of *Morando '796*.

Claims 1 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,168,753 ("*Morando '753")* in view of U.S. Patent No. 6,354,796 ("*Morando '796"*). Applicant respectfully submits that neither reference, alone or in combination, teaches or suggests the claimed invention.

Morando '753 teaches a graphite leg surrounded by a ceramic sleeve 34, which is adhered to the graphite leg utilizing cement. Col. 2, ll. 33-39; ll. 49-58. A graphite leg 70 is housed within a ceramic sleeve 62. The graphite leg 70 is formed with an external helical groove

68 that is connected to channel 74, which in turn connects to conduit 30 to allow nitrogen gas to form a "helical shield" around the graphite leg 70 through the helical groove 70 during operation of the pump. Col. 3, ll. 14-44. *Morando '753* does not teach a product made by the process of the current invention and is presumed to be made utilizing the known process of first applying uncured cement to the graphite component and then sliding on the ceramic sleeve. As acknowledged by the Office Action, *Morando '753* does not teach, among other things, (a) a non-protected component, such as a graphite shaft, that has one or more passages through which uncured cement can be injected, and/or (b) a protective coating, such as a ceramic sleeve, that has one or more openings through which uncured cement can be injected.

Furthermore, *Morando '753* teaches away from the combination proposed by the Office Action. As discussed previously, *Morando '796* expressly states that the "cement is injected under pressure in opening 180 and via passage 174." Col. 4, ll. 63-64 (emphasis added). Injecting cement between the graphite leg 70 and ceramic sleeve 62 would necessarily fill the helical groove 68 and channel 74. This would render the embodiment depicted in Figures 3 and 4 of *Morando '753* inoperable because nitrogen gas would be prevented from flowing and forming the "helical shield" described by *Morando '753*. As such, there is no motivation to combine *Morando '753* and *Morando '796* as proposed by the Office Action and (at least) *Morando* '753 teaches away from the proposed combination.

C. Rejection under §103 over *Grant* or *Morando '753* in view of *Morando '796*.

Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable in view of either U.S. Patent No. 6,371,723 ("*Grant*") or U.S. Patent No. 6,168,753 ("*Morando '753*") in view of U.S. Patent No. 6,354,796 ("*Morando '796*"). Applicant respectfully submits that none of the cited references, alone or in combination, teach or suggest the claimed invention.

As discussed above and as acknowledged in the Office Action, neither *Grant* nor *Morando '753* disclose the limitations of the claimed invention. Additionally, the proposed combinations of *Morando '796* with *Grant* or *Morando '753* as proposed by the Office Action would render both the *Grant* and *Morando '753* devices inoperable and/or unfit for their intended purpose for the reasons stated previously and are therefore not properly combined.

Thus, neither *Grant*, *Morando '753*, nor *Morando '796*, individually or in combination, teach (a) a non-protected component, such as a graphite shaft, that has one or more passages through which uncured cement can be injected and/or (b) a protective coating, such as a ceramic

sleeve, that has one or more openings through which uncured cement can be injected, and as such does not anticipate any of independent claims 1, 22, and 34. Applicant therefore respectfully submits that the claims are in condition for allowance and respectfully requests reconsideration and further examination in view of the foregoing.

CONCLUSION

Reconsideration is respectfully requested. Applicant believes the case is in condition for allowance and respectfully requests withdrawal of the rejections and allowance of the pending claims.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to **Deposit Account No. 19-3878**.

The Examiner is invited to telephone the undersigned at the telephone number listed below if it would in any way advance prosecution of this case.

Respectfully submitted,

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